REMARKS

The Office Action dated May 6, 2009 has been reviewed and carefully considered. Claims 15-20 are added. Claims 1-20 are pending. The independent claims are 1, 9, 15, 16 and 20. Independent claims 1 and 9 are not amended. Claims 2-4, 6-8, 10 and 12 are amended. Reconsideration of the application, as amended and in view of the following remarks, is respectfully requested.

The Office Action fails to withdraw the claim rejections based on Chan. See Office Action page 2. In this regard, the Office Action even fails to withdraw the Chan-based rejections of claims 6-8, despite the traversal based on both procedural and substantive grounds. See MPEP 707.07(f), third paragraph. Page 2 of the Office Action suggests that Chan applies to all, or perhaps some, of the claims. These issues are addressed immediately below.

REJECTION OF CLAIMS 6-8 BASED ON CHAN

Claims 6-8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chan (US 6,355,420) in view of Wischmann et al. (US 6,854,885) ("Wischmann").

The 10/14/08 Office Action relies on the Wischmann reference in rejecting claim 6.

Applicant traverses on procedural and substantive grounds.

Regarding procedural grounds, the Wischmann reference does not qualify as prior art as to claims 6-8.

In particular, the effective filing date of claims 6-8 is the date of filing of the German priority application 102 45 715.8, under 35 U.S.C. 119. That date is October 1,

2002. Priority was claimed in the declaration filed concurrently with the instant application on March 29, 2005. Also concurrently, a copy of the certified copy of the German priority application 102 45 715.8 was received by the USPTO from the International Bureau pursuant to PCT Rule 17.2.

To perfect the priority date of October 1, 2002, pursuant to 37 CFR 1.55(a)(4)(i)(B), the February 10, 2009 reply was accompanied by an accurate translation into English of the certified copy of the German priority application 102 45 715.8.

The Wischmann reference was published on April 24, 2003, after the effective filing date of the instant application.

Pursuant to 35 U.S.C. 103(c)(1), the subject matter of Wischmann and claims 6-8 were, at the time the invention recited in claims 6-8 was made, owned by Philips Electronics or subject to an obligation of assignment to Philips Electronics. Accordingly, the Wischmann reference cannot serve as prior art against the instant claims 6-8.

Regarding substantive grounds for Applicant's traversal, whereas Chan discloses a CCD used in microscopy (col. 35, line 65: "microscopy"), the Wischmann calibration-based correction pertains to X-ray detectors (col. 1, line 27(28): "X-ray detectors"; col. 4, line 34: "X-ray detector"; col. 6, line 16: "X-ray"). Applicant is aware of no disclosure or suggestion that the Wischmann calibration-based correction for X-ray detectors is suitable for a CCD used in microscopy.

In addition, Wischmann does not mention a mosaic of images, collimation or a sub-region. Thus, it is unclear, from Chan and Wischmann, how "calibration images are related to the sub-region."

Based on the above substantive considerations, it is unclear to Applicant by what reasoning it could properly be deemed that it would have been obvious to modify Chan in view of Wischmann to yield an embodiment, "the evaluation of the pixel signals being performed by means of calibration images related to the sub-region."

Nor can the Wischmann reference compensate for Chan deficiencies with regard to parent claim 1.

As to claim 1, in particular, Chan discusses engineering considerations in designing an array of sensors, with respect to sub-arrays, binning and read-out, and the 10/14/08 Office Action cites to Chan, col. 36, line 40 to col. 37, line 17 and col. 38, lines 27-35.

Chan fails to disclose or suggest, ". . . deriving, by said imaging device . . . said deriving being performed, in view of the at least one preset parameter, in such a manner that the maximum rate G_{max} of the evaluation unit is not exceeded during the reading out of all pixel signals from the sub-region."

For at least the foregoing procedural and substantive reasons, the rejection of claim 6 lacks validity.

Claims 7 and 8 depend from, and include all the limitations of, base claim 6, and are likewise patentable over combination the Office Action cites.

Reconsideration and withdrawal of the rejection is respectfully requested.

In the interest of expeditious prosecution, Applicant respectfully requests that the rejection be withdrawn in the next Office Action.

REJECTIONS OF CLAIMS 1-5, 9 AND 10 BASED ON CHAN

Claims 2, 3 and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chan (US 6,355,420) in view of Hoffman et al. (EP 1089555A1) ("Hoffman").

Claim 10 recites:

> An imaging device comprising:
> a two-dimensional field of image sensors; and
> an evaluation unit configured for, at a maximum rate of no more than G_{max}, reading out and processing pixel signals, said pixel signals representing output signals of said image sensors combined by a binning operation at a binning factor of unity or greater, said imaging device being configured to enable presetting of at least one parameter in order to define a sub-region of the field, said imaging device being further configured for, based on said at least one preset parameter and on said maximum rate G_{max}, deriving a) said binning factor, b) an imaging rate, and c) any parameters for defining the sub-region that were not preset in said presetting, said device further comprising: a beam path; and an X-ray apparatus with an adjustable diaphragm arrangement in the beam path, said arrangement including an adjustable diaphragm device, said apparatus being configured such that at least one adjustment parameter of said diaphragm device is among said at least one preset parameter

Claim 10 is amended for clarity. Support for the amendment is found in the specification, (e.g., page 2, lines 22-25; and page 8, lines 14-16).

Claim 10, as amended, recites, ". . . said imaging device being further configured for, based on said at least one preset parameter and on said maximum rate G_{max}, deriving a) said binning factor, b) an imaging rate, and c) any parameters for defining the sub-region that were not preset in said presetting. . ."

Chan fails to disclose or suggest this feature of claim 10, and Hoffman fails to compensate for the deficiencies in Chan.

For at least this reason, the rejection of claim 10 lacks validity.

Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 2 and 3 depend from claim 1, which recites:

> presetting, on said imaging device, at least one parameter in order to define a sub-region of the field; and deriving, by said imaging device, any remaining parameters for defining the sub-region as well as a binning factor b and an imaging rate f, said deriving being performed, in view of the at least one preset parameter, in such a manner that the maximum rate G_{max} of the evaluation unit is not exceeded during the reading out of all pixel signals from the sub-region.

Chan discusses engineering considerations in designing an array of sensors, with respect to sub-arrays, binning and read-out, and the 10/14/08 Office Action cites to Chan, col. 36, line 40 to col. 37, line 17 and col. 38, lines 27-35.

However, the prior art of record, alone or in combination, fails to disclose or suggest, ". . . deriving, by said imaging device . . . said deriving being performed, in view of the at least one preset parameter, in such a manner that the maximum rate G_{max} of the evaluation unit is not exceeded during the reading out of all pixel signals from the sub-region."

The prior art of record, alone or in combination, also fails to disclose or suggest, "said deriving being performed, in view of the at least one preset parameter, in such a manner that the maximum rate G_{max} of the evaluation unit is not exceeded during the reading out of all pixel signals from the sub-region."

For at least the foregoing reasons, claim 1 distinguishes patentably over the prior art of record.

The Office Action relies on disclosure that the Chan binning factor, as an operational mode, "is dictated by the components of the camera and a host computer" (Chan, col. 37, lines 15-17).

The Office Action seems to imply that the "sub-region" of claim 1 is a Chan pixel (formed by binning).

The Office Action seems to also imply that "the components of the camera and a host computer" in Chan, the Chan binning factor, and the Chan "temporal resolution" somehow account for the "at least one parameter," the "remaining parameters," the "binning factor," and the "imaging rate" of present claim 1. See Office Action, page 2.

The Office Action does not seem to offer any further guidance, except to say "presetting and resetting would be within one of ordinary skill in the art."

It is unclear to Applicant whether the Office Action suggests that these feature of claim 1 correspond to the Chan features, are inherent based on the Chan features, or are obvious based on the Chan features.

The Board of Patent Appeals and Interferences (BPAI) is repeatedly citing *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727, 82 USPQ2d 1385 (2007) as it, in turn, cited In re Kahn.

"[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." (In re Kahn, 441 F. 3d 977, 988 (CA Fed. 2006) cited with approval in KSR, 550 U.S. at __, 82 USPQ2d at 1396) MPEP 2141(III), fifth paragraph, next-to-last sentence.

The Office Action fails to provide articulated reasoning for its suggestion of obviousness.

The Office Action, in addition, is silent on the claim 1 feature, ". . . deriving, by said imaging device . . . said deriving being performed, in view of the at least one preset parameter, in such a manner that. . ."

According to the best understanding of Applicant, not only does Chan fail to disclose or suggest the "deriving" of the present claim 1. Chan further fails to disclose or suggest, ". . . deriving, by said imaging device . . . said deriving being performed, in view of the at least one preset parameter, in such a manner that. . ." Moreover, Hoffmann fails to make up the difference.

For at least all of the above reasons, the prior art of record, alone or in combination, fails to anticipate or render obvious the present invention as recited in claim 1.

Claims 2 and 3 depend from, and include all the limitations of, claim 1, and likewise are patentable over the prior art of record.

Claims 1, 4, 5 and 9 stand rejected under 35 U.S.C. 102(b) as being anticipated by Chan.

Claim 1 distinguishes patentably over Chan, for at least the reasons mentioned above in this reply.

Therefore, the anticipation rejection is invalid as to claim 1 as amended.

Claim 4 depends from base claim 1, and is patentable over Chan at least due to its dependency from the base claim 1.

In addition, the 10/14/08 Office Action characterizes Chan as disclosing a service mode of the imaging device in line 12 of column 37. Applicant traverses.

Chan relates to a CCD camera for microscopy (col. 35, line 65: "microscopy"). The CCD camera may be programmable (col. 36, line 64: "programmed"), but Chan fails to disclose or suggest, "[a] method of operating an imaging device . . . , said device having a service mode, said sub-region being preset in said service mode."

Furthermore, there does not appear to be any indication that any such hypothetical Chan microscopy "service mode" would entail "the reading out of all pixel signals from the sub-region," or would involve parameters being "defined in such a manner that the maximum rate G_{max} of the evaluation unit is not exceeded during the reading out of all pixel signals from the sub-region."

For at least these reasons, Chan fails to anticipate the present invention as recited in claim 4.

Reconsideration and withdrawal of the rejection is respectfully requested.

Claim 5 depends from, and includes all of the limitations of, base claim 1 as amended, and is likewise not anticipated by Chan.

Claim 9 recites:

> the imaging device being configured to enable presetting of at least one parameter in order to define a sub-region of the field, and further configured for deriving any remaining parameters for defining the sub-region as well as a binning factor b and an imaging rate f, said deriving being performed, in view of the at least one preset parameter, in such a manner that the maximum rate G_{max} of the evaluation unit is not exceeded during the reading out of all pixel signals from the sub-region.

Claim 9 distinguishes patentably over Chan. Chan discusses engineering considerations in designing an array of sensors, with respect to sub-arrays, binning and

read-out, and the Office Action cites to Chan, col. 36, line 40 to col. 37, line 17 and col. 38, lines 27-35.

In particular, Chan fails to disclose or suggest, ". . . the imaging device being configured to enable presetting of at least one parameter in order to define a sub-region of the field, and further configured for deriving any remaining parameters for defining the sub-region . . . said deriving being performed, in view of the at least one preset parameter, in such a manner that the maximum rate G_{max} of the evaluation unit is not exceeded during the reading out of all pixel signals from the sub-region."

Chan fails to disclose or suggest this feature of claim 9.

Claim 9 is accordingly, for at least this reason, not anticipated by Chan.

REJECTION OVER BOOYSEN IN VIEW OF AIZAKI

Claims 1-6 and 8-14 stand rejected under 35 U.S.C. 103(a) as unpatentable over Booysen et al. (US 6921200) ("Booysen") in view of Aizaki et al. (US 20030016301) ("Aizaki").

Claim 1 recites, ". . . deriving, by said imaging device, . . . an imaging rate. . ."

Booysen mentions, as performance related specifications, the image information read-out speed and the data rate to the image pre-processor.

Booysen, however, fails to disclose or suggest, ". . . deriving, by said imaging device, . . . an imaging rate. . ."

The Office Action is silent as to this feature.

Booysen and Aizaki both fail to disclose or suggest this feature. Nor does Aizaki compensate for this shortcoming of Booysen.

For at least this reason, claim 1 is not rendered obvious by the applied combination of references.

Claim 1 also recites, ". . . presetting, on said imaging device, at least one parameter in order to define a sub-region of the field; and deriving, by said imaging device, any remaining parameters for defining the sub-region as well as a binning factor b and an imaging rate f, said deriving being performed, in view of the at least one preset parameter, in such a manner that. . ."

The Office Action, at the bottom of page 3 and the top of page 4, cites an Aizaki "binning number B" ([0065]-[0067]) as the "preset parameter."

To account for the claim 1 feature, "deriving. . . a binning factor. . . in view of the at least one preset parameter," the Office Action offers, by way of explanation, "as the [Aizaki] binning number is changed from the previously set binning number." See Office Action, page 4, lines 7-8.

However, neither the Aizaki binning number B, nor "any remaining parameters for defining the sub-region as well as a binning factor b and an imaging rate f," are derived based on a previous value of B. See Aizaki, [0065]-[0067].

Moreover, even if the above- and below-described inadequacies of the prior art could be overcome, meeting claim 1 in the manner the Office Action suggests would require that all the device-derived quantities, i.e., the binning number, the remaining parameters, the factor b and the rate f, be derived based on the previous value of B.

Applicant fails to see how such a meeting of claim 1 could properly be deemed disclosed or suggested based on the prior art of record.

Also, claim 1 recites, ". . . presetting, on said imaging device, at least one parameter in order to define a sub-region of the field; and deriving, by said imaging device, any remaining parameters for defining the sub-region as well as a binning factor b and an imaging rate. . . in view of the at least one preset parameter. . ."

The Aizaki binning number accordingly, for at least this reason, cannot properly be equated to the "parameter" or "any remaining parameters" of the present claim 1. See Aizaki, [0045].

In addition, claim 1 recites, ". . . deriving, by said imaging device, . . . said deriving being performed, in view of the at least one preset parameter, in such a manner that the maximum rate G_{max} of the evaluation unit is not exceeded during the reading out of all pixel signals from the sub-region."

The Office Action suggests that this feature of claim 1 is found in Aizaki, [0066], last sentence. See Office Action, page 4, lines 9-10.

The Office Action specifically points out the language, "[t]he image can be picked up with . . . minimum number of pieces of data in a range in which optical information by the microscope is not lacking."

It appears that the Office Action implies that the Aizaki "range" relates to the "maximum rate G_{max}" of claim 1.

However, the Aizaki "range" is an optical range; it is not a range of data transfer/processing rate. See Aizaki, [0115].

For this reason too, the prior art of record, alone or in combination, additionally fails to disclose or suggest, ". . . deriving, by said imaging device, . . . said deriving being

performed, in view of the at least one preset parameter, in such a manner that the maximum rate G_{max} of the evaluation unit is not exceeded during the reading out of all pixel signals from the sub-region."

Furthermore, it is the position of the Office Action, to the best understanding of Applicant, that Booysen discloses the claim 1 preamble and Aizaki discloses the claim 1 body.

Aside from erroneousness of this position, as discussed above, the Office Action fails to say why it deems it to have been obvious to have modified Booysen in view of Aizaki.

The Office Action suggests apparently no more than that a microscope system is from "the same field of endevour" as an X-ray apparatus.

It is, however, unclear to Applicant how and for what reason the Booysen X-ray apparatus would have been modified based on the Aizaki microscope system, given, for example, their differing optics. See Aizaki, [0004]-[0006]; [0059]; and [0066], last sentence.

It appears to Applicant that the Office Action falls short of articulating reason or motivation for combining references.

The Board of Patent Appeals and Interferences (BPAI) is repeatedly citing *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727, 82 USPQ2d 1385 (2007) as it, in turn, cited In re Kahn.

"[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational

underpinning to support the legal conclusion of obviousness." (In re Kahn, 441 F. 3d 977, 988 (CA Fed. 2006) cited with approval in KSR, 550 U.S. at ___, 82 USPQ2d at 1396) MPEP 2141(III), fifth paragraph, next-to-last sentence.

The Office Action fails to provide articulated reasoning for its suggestion of obviousness.

For at least all of the above-discussed reasons, the combination of references the Office Action applies fails to render obvious the present invention as recited in claim 1.

Reconsideration and withdrawal of the rejection is respectfully requested.

As to claim 9, it is an apparatus claim analogous to method claim 1, and, similarly, recites:

> the imaging device being configured to enable presetting of at least one parameter in order to define a sub-region of the field, and further configured for deriving any remaining parameters for defining the sub-region as well as a binning factor b and an imaging rate f, said deriving being performed, in view of the at least one preset parameter, in such a manner that the maximum rate G_{max} of the evaluation unit is not exceeded during the reading out of all pixel signals from the sub-region

The combination of references the Office Action cites fails to render obvious the present invention as recited in claim 9 at least for reasons analogous to those cited above with regard to the rejection of claim 1.

The amendment of claim 12 finds support in the specification, (e.g., page 3, lines 16-29).

Claims 2-6, 8 and 10-14 depend from the respective base claim, which has been shown to be patentable, and are likewise deemed to be patentable.

Reconsideration and withdrawal of the rejection is respectfully requested.

REJECTION OVER BOOYSEN IN VIEW OF AIZAKI AND JALINK

Claim 7 stands rejected under 35 U.S.C. 103(a) as unpatentable over Booysen in view of Aizaki and Jalink et al. (US 5844242) ("Jalink").

Claim 7 recites, ". . . calibration images for an arbitrary new sub-region are acquired from the overall calibration images."

The first paragraph in item 14 of the Office Action acknowledges that Booysen fails to disclose or suggest this feature of claim 7.

The Office Action is silent, however, as to how it deems the proposed combination of references to have this feature.

Applicant is unable to find this feature in any of the references, alone or in combination.

Claim 7 depends from base claim 1, and Jalink fails to make up for the shortcomings of Booysen and Aizaki.

For at least the foregoing reasons and as set forth in the remarks above, the prior art of record fails, alone or in combination, to render obvious the present invention as recited in claim 7.

Reconsideration and withdrawal of the rejection is respectfully requested.

REJECTIONS OF DEPENDENT CLAIMS

Other dependent claims, besides claim 7, likewise further distinguish over the prior art of record.

For example, claim 6 recites, ". . . the evaluation of the pixel signals being performed by means of calibration images related to the sub-region."

The Office Action cites to FIG. 16 in Booysen for this feature.

Applicant, however, is unable to find such disclosure or suggestion in FIG. 16 or elsewhere in Booysen.

Reconsideration and withdrawal of the rejection is respectfully requested.

NEW CLAIMS

Support for new independent claims 15 and 16 is found in the specification, (e.g., page 2, lines 16-32; page 6, lines 11-16; and page 7, lines 7-12).

New independent claims 15 and 16 recite the feature, performed by "the imaging device" of, "based on said at least one preset parameter and on said maximum rate G_{max}, deriving a) any parameters for defining the sub-region that were not preset in said presetting, b) said binning factor, and c) an imaging rate."

The prior art of record, alone or in combination, fails to disclose or suggest at least this feature.

Support for new dependent claim 17 is found in the specification, (e.g., page 2, lines 21-26).

New dependent claims 18 finds support in the specification, (e.g., page 5, lines 25-27; page 8, lines 14-21; page 10, lines 21-22; and page 11, lines 7-8).

Support for new dependent claim 19 and new independent claim 20 is found in the specification, (e.g., page 2, lines 16-32; page 6, lines 11-16; page 7, lines 7-12; page 8, line 10 to page 9, line 8).

New independent claim 20 distinguishes patentably over the prior art of record at least for the same reason set forth immediately above with regard to claims 15 and 16.

CONCLUSION

In view of the above, it is respectfully submitted that the present application is in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

The Director is hereby authorized to charge any fee which may be required, or credit any overpayment, to Deposit Account No. 50-3960.

Respectfully submitted,

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